REMARKS/ARGUMENTS

Claims 1-32 are pending in the present application. Claims 1, 2, 13-15, 16, 20-25, 29 and 32 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Fuchs (U.S. Patent No. 6,418,475) in view of Morris (U.S. Patent No. 5,058,185). Claims 3-12, 17-19, 26-28, 30 and 31 have been rejected over 35 U.S.C. § 103(a) as being unpatentable over Fuchs in view of Morris and further in view of Jamroga (U.S. Patent No. 6,574,742).

Submitted with this communication are the following documents:

(1) A declaration pursuant to 37 C.F.R. §1.132 by Timothy J. O'Connor (referred to herein as O'Connor);

(2) A marketing brochure entitled, "TeraMedica Healthcare Technology: Statement of Unique Functionality" (herein referred to as The Statement);

(3) A product publication entitled, "Need an Archive? But Want More Than Images?: Evercore™ Clinical Information Manager Solution Overview: (herein referred to as The Overview); and

(4) A curriculum vitae of Timothy J. O'Connor.

Applicant's attorney strongly urges the Examiner to read documents (1) and (2) in their entirety in order to appreciate the importance of the present invention.

Claim 1 has been amended to more clearly distinguish the present invention from the Fuchs and Morris patents. Accordingly, claims 2 and 7 have been amended with respect to the amendments made to claim 1, on which they depend.

The present invention relates to the field of systems for the storage and management of medical images within a healthcare enterprise. In general, the present invention is an image management system for medical images and associated textual metadata. The images and their associated metadata are received from a plurality of different medical imaging systems, which can be located in any number of different physical locations (e.g., different clinical departments in a

hospital or different hospitals all together). In order to manage the vast quantity of data associated with these medical images, the present invention employs a business rules processor and a set of stored rules to intelligently manage the storage, transfer, and retrieval of medical images and their associated metadata. By employing such a business rules processor, many parameters can be extracted from the metadata and utilized to evaluate the stored rules. Exemplary parameters include the imaging system with which an image was acquired, the particular imaging modality of said imaging system, information related to the patient, and information related to the clinical departments that will require access to the images. In this way, sophisticated image management can be achieved. Therefore, the present invention provides an intelligent business rules processor to evaluate parameters derived from metadata in accordance with a set of complex rules.

It is important to note that the business rules processor is an adaptable system. That is, rules are not "hard-coded," but instead can be created and edited easily by a system operator (Present Application; paragraph [0067]). In this way, the image management system of the present invention can be modified to accommodate advances in medical technology or suit the needs of a specific clinical institution. Together, these features provide a more efficient means to store and manage medical images over a large healthcare enterprise, which can include multiple healthcare institutions each having multiple departments.

Fuchs discloses a medical imaging system that has a number of memory systems and a control system that controls the storage of the image data acquired by the medical imaging system in the plurality of memory systems. The only control in determining which memory systems receive which medical images is based on distributing the loads equally across the memory systems. As a result, peak loads on any one particular memory system are avoided. Additionally, the memory systems are capable of rerouting medical images amongst themselves so as to avoid any backlogging associated with a short or long term duration of outage of a given memory system. This system for storing and managing medical images is limited to a local network associated with a particular medical imaging system. Furthermore, the control system is limited in routing medical images to different

memory systems based solely on how much load a given memory system is experiencing or to a workstation console, and is not otherwise concerned with where a medical image is stored. The concept of a rules processor cannot be found in this reference (cf. O'Connor; paragraphs 12 and 13).

Morris discloses an object management and delivery system for images of scanned documents. The object management system disclosed in Morris stores each object (i.e., image of a scanned document) to one of two storage devices depending on whether the image has a high or low resolution. To increase the efficiency of retrieving an image, Morris teaches that if a given resolution copy of an image is desired that the object management system should look on the storage device corresponding to said resolution. Furthermore, Morris teaches that each image is assigned a permanent name. Contained within this name is information related to the date each image was created. Based on this information images are transferred from a high resolution storage device to a permanent optical storage device after a period of, for example, thirty days, in order to maintain adequate storage capacity. Every image produced by the object management system of Morris is stored in a predetermined manner that is hard-coded into the management system. This is a simple data management scheme that is wholly insufficient for the efficient management of medical images (cf. O'Connor; paragraphs 14-16).

Jamroga discloses a communication system for managing the storage of medical images across a healthcare enterprise. However, Jamroga '742 does not teach or suggest a rules processor for processing metadata in accordance with a set of stored rules in order to determine how medical images are to be managed and stored across the healthcare enterprise. Instead, images are always transferred to both short- and long-term storage regardless of any information related to the images or where they were produced (cf. Jamroga; col. 8, lines 56-60; col. 10, lines 29-32; col. 12, lines 52-56; col. 14, lines 35-38. Also, cf. O'Connor; paragraph 17).

Regarding independent claim 1 of the present invention, the Office action asserted that Fuchs and Morris teach, in combination a business rules processor that processes metadata in a received message to determine, in accordance with

stored rules, which one of a plurality of storage devices should store the image data associated with the metadata. Applicant respectfully disagrees with this assertion. First, the combination of Fuchs and Morris would not lead one skilled in the art to the present invention because they do not ***disclose all of the*** recited claim elements when taken either alone or in combination. Second, the present invention meets a long felt need in the medical imaging field and a commercial product made according to the claimed invention has enjoyed considerable commercial success (cf. MPEP 716.03 and MPEP 2145), which evidences that the present invention is patentably non-obvious.

First, consider claim 1 as amended, which calls for, in part:

> a business rules processor coupled to the means for receiving to process metadata in a received message to determine in accordance with stored rules which one of the plurality of storage devices should store the associated image data; and
>
> archiving means responsive to the determination made by the business rules processor to transfer the image data in the buffer to said one storage device.

There is no teaching or suggestion made by either Morris or Fuchs that is directed to "a ***business rules processor*** coupled to the means for receiving to process metadata in a received message to determine in accordance with stored rules which one of the plurality of storage devices should store the associated image data" (emphasis added). Instead, Morris is limited to teaching that an image is necessarily created at a given, high resolution (cf. Morris; col. 3, line 65-col. 4, line 7; col. 9, lines 20-22. Also, cf. O'Connor, paragraphs 14 and 16). Subsequently, that image is compressed into a lower resolution copy for reduced storage size and both a high resolution and low resolution image are stored in respective storage devices (cf. Morris; col. 4, lines 19-30; col. 4, lines 40-56). There is no business rules processor or equivalent system to intelligently manage the flow of data, nor is there any evaluation made in accordance with a set of stored rules to manage the transfer of data. Instead, every image that has a low resolution is sent to one storage device, and every image that has high resolution is sent to a different storage device. Furthermore, after a set period of time, images from the high resolution

storage device are transferred to permanent storage. Likewise, there is no teaching or suggestion made by Fuchs that is directed to a business rules processor as called for in claim 1 of the presently claimed invention.

As such, it cannot be said that Fuchs or Morris, whether taken alone or in combination, teach all of the elements of claim 1 of the claimed invention since neither Fuchs nor Morris teach or suggest "a ***business rules processor*** coupled to the means for receiving to process metadata in a received message to determine in accordance with stored rules which one of the plurality of storage devices should store the associated image data" (emphasis added).

The foregoing arguments notwithstanding, Applicant further respectfully asserts that the present invention is patentably non-obvious through a showing of commercial success (cf. MPEP 716.03). It is noted that "[T]he Graham factors, including secondary considerations when present, are the controlling inquiries in any obviousness analysis" and that "[r]ebuttal evidence may include evidence of secondary considerations, such as commercial success" (cf. MPEP 2145). Thus, Applicant first brings attention to O'Connor, paragraph 18, wherein the assertion of commercial success is presented. The fact that Applicant's commercial success has relied on marketing the ***claimed invention*** (cf. MPEP 716.03(b)) serves as a nexus between the commercial success of the resultant product and the claimed invention (cf. MPEP 716.03(a)). The commercial success is evidenced by the direct marketing of the ***claimed invention*** (cf. The Statement; page 4, in which the intelligent management is provided through clinical policies, or rules; page 4, in which the clinical policies are decided from metadata. Also, cf. O'Connor; paragraph 19). Furthermore, the novel and non-obvious solution provided by the present invention has enabled the Assignee of the present invention to sell commercial products to a list of prestigious clientele in the healthcare field (cf. O'Connor, paragraph 18).

Without the commercial success of the ***claimed invention***, Assignee's business, TeraMedica Healthcare Solutions, would have failed. Instead, TeraMedica has prospered despite being in competition with such healthcare industry leaders as GE Healthcare and Siemens Medical Solutions. Because of the

commercial success of TeraMedica, evidenced by the retention of the prestigious clientele (cf. O'Connor, paragraph 18), which resulted from directly marketing the ***claimed invention*** (cf. The Statement; also cf. O'Connor, paragraph 19), Applicant respectfully asserts the nonobviousness of the claimed invention pursuant to the secondary considerations provided by the Graham factors (MPEP 2145).

Regarding claims 16 and 24, the foregoing arguments and evidence of commercial success apply mutatis mutandis, and it is therefore believed that claims 16 and 24 further recite patentable subject matter.

In addition to the foregoing reasons, the following dependent claims are further viewed as being patentable as they define, in further detail, the nature of the business rules processor and the rules on which the business rules processor evaluates metadata and image data.

Further regarding claims 7 and 17, the Office action asserted that the combination of Fuchs, Morris, and Jamroga taught the feature of a business rules processor that includes a set of stored rules, the stored rules identifying a set of parameters that must be present in order for the business rules processor to evaluate a given rule as satisfied. Applicant respectfully disagrees.

There is no teaching or suggestion in Fuchs, Morris, or Jamroga, whether taken alone or in combination, that is directed to ***a business rules processor*** that includes "a plurality of stored rules" that "identify different actions to be performed," where each of the plurality of stored rules "identifies a set of parameters which must be present for the rule to be satisfied." There is no teaching or suggestion in either Fuchs, Morris, or Jamroga, whether taken alone or in combination, that is directed to a ***business rules processor*** that operates on a set of parameters contained in a set of stored rules in order to evaluate where and how an image is to be stored.

Further regarding claim 25, the above arguments related to claims 7 and 17 apply mutatis mutandis. Moreover, there is no teaching or suggestion in either Fuchs or Morris, whether taken alone or in combination, that is directed to

"comparing parameters in a stored rule with information in the associated metadata to determine if the rule is satisfied."

Regarding claims 19, 30, and 31, the Office action asserted that the combination of Fuchs, Morris, and Jamroga taught the feature of editing rules that are stored in the image management system of the claimed invention. Applicant respectfully disagrees.

There is no teaching or suggestion in Fuchs, Morris, or Jamroga, whether taken alone or in combination, that is directed to "a workstation ... for enabling a user to input and edit said stored rules." Moreover, there is no teaching or suggestion made in Fuchs, Morris, or Jamroga, whether taken alone or in combination, that is directed to changing or editing previously stored rules at all. The Office action asserted that the suggestion is made in Jamroga because the storage rules suggested by Jamroga are "set by the system software" (cf. Jamroga; col. 13, lines 56-57). Applicant notes that system software is compiled source code that cannot be directly edited or changed. Instead, changes must be made to the source code and the software recompiled and reinstalled in order for the changes to take effect. This is a technically demanding task not within capabilities of most individuals operating a medical image management system (e.g., radiological technicians and physicians). There is ***no suggestion*** that the storage rules of Jamroga are editable ***by*** the system software by a user operating a workstation. As such it cannot be said that Fuchs, Morris, or Jamroga, whether taken alone or in combination, teach or suggest all of the features present in claims 19, 30, and 31 of the claimed invention.

Moreover, Applicant respectfully notes that the claimed invention provides a solution for the difficulties associated with changes in the storage policy or infrastructure in a healthcare enterprise (cf. O'Connor; paragraphs 6-8) that is not present in either Fuchs, Morris, or Jamroga. By allowing a user to easily edit, remove, and add rules to the image management system of the present invention, the user can effortlessly change how the image management system operates in accordance with changes in business policy or upgrades to the storage

infrastructure (cf. O'Connor; paragraph 9). There is no solution to this complex task provided by Fuchs, Morris, or Jamroga.

Further regarding claim 20, the Office action asserted that the combination of Fuchs and Morris taught the image management system of claim 17, further including a persistent messaging service that stores messages to be acted upon at a later time. However, there is no teaching or suggestion in Morris or Fuchs, whether taken alone or in combination, that is directed to an image management system that includes "a persistent messaging service coupled to the processor means and being operable to store said message to be acted upon at a later time." Instead, Morris teaches that if additional pages are to be added to a scanned digital record that the new pages are ***manually transported*** to a document scanner workstation (cf. Morris; col. 20, lines 10-12, lines 42-50). On the other hand, the present invention teaches an ***electronic*** persistent messaging service that operates in accordance with a programming language, such as JAVA (cf. Present Application; paragraph [0054]). As such, it cannot be said that either Fuchs or Morris, whether alone or in combination, teach or suggest "a persistent messaging service coupled to the processor means and being operable to store said message to be acted upon at a later time." Applicant further respectfully notes that in the previous Office action the Examiner indicated that claim 20 recited patentable subject matter. For this and the foregoing reasons, the allowance of claim 20 is respectfully requested.

For at least the foregoing reasons, the rejected independent claims (1, 16, and 24) recite subject matter that is patentable over the prior art and their allowance is respectfully requested.

Furthermore, for at least the foregoing reasons, the rejected dependent claims 7, 17, 20, 25, 30, and 31 recite subject matter that is patentable over the prior art and their allowance is respectfully requested.

Claims 2-15 are dependent on claim 1, claims 17-23 are dependent on claim 16, and claims 25-32 are dependent on claim 24 and are all patentable for the reasons discussed above.

The Commissioner is authorized to charge any fees under 37 C.F.R. § 1.17 that may be due on this application to Deposit Account 17-0055. The Commissioner is also authorized to treat this amendment and any future reply in this matter requiring a petition for an extension of time as incorporating a petition for extension of time for the appropriate length of time as provided by 37 C.F.R. § 136(a)(3).

Respectfully submitted,

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